

Gora Underground Caldera Structure of Hakone Volcano; Geology and its implication

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Hakone Volcano has a caldera dimension of which is 11x8km. The author has proposed that the caldera is a complex of underground funnel shaped calderas. The detailed geological structure of Gora Underground Caldera Structure (GUCS), one of such underground calderas, is discussed in the presentation. GUCS is firstly considered as a caldera created as a result of an eruption of the period of Younger Caldera formation (80-60ka) based on analysis of lava block in the caldera fill lapilli tuff and pollen fossil assemblage of overlying sand-silt deposit.

The author's analysis shows that the sand-silt facies is classified into two categories and named as facies SD and SF respectively. The facies SD is characterized as follows; 1) contains diatom fossil, 2) without hornblend, 3) pollen fossil assemblage of cool to temperate, 4) lava block of younger edifice is contained within the lapilli tuff beneath the facies SD. On the other hand the facies SF is characterized as; 1) no or rare diatom fossil, 2) contains hornblend bearing pumice, 3) contains *Lagerstroemia* pollen that is a warm-temperate element, 4) without block of younger edifice origin within the lapilli tuff beneath the facies SF. Hakone has never provided hornblend bearing tephra through the history, however there are several tephra deposit in this area. These hornblend bearing tephra is more common in the stage of older caldera formation (23-13ka). Thus the formation of facies SF can be considered as a deposit of the stage of older caldera formation. This hypothesis can be supported by the stratigraphy and the climate correlation as deduced from the evidences shown before. The presence of SF show that the area had been functioned as basin at the age of old caldera formation and GUCS was formed in the depression.